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PATENT, TRADEMARK, COPYRIGHT
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AND RELATED LITIGATION

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December 21, 2006

TTAB

Commissioner for Trademarks
Trademark Trial and Appeal Board
P.O. Box 1451
Alexandria, VA 22313-1451

Re: Opposition No. 91165809
Triforest Enterprises, Inc. v. Nalge Nunc International Corporation
Application Serial No. 76/572,253

Dear Madam:

Enclosed find the following with respect to the above-referenced matter:

1. Applicant Nalge Nunc International Corporation's Notice of Filing Deposition Transcript of Samuel L. Belcher;
2. Deposition Transcript of Samuel L. Belcher; and
3. First-Class Mail Certification and postcard.

Please contact me if you have any questions regarding this matter.

Very truly yours,

Brett A Schatz

BAS:alf
Enclosures
cc: Theodore R. Remaklus, Esq. (w/o Enclosures)
Sarah Otte Graber, Esq. (w/o Enclosures)

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[redacted]

12-26-2006

U.S. Patent & TMOfc/TM Mail Rcpt Dt. #22

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

In re Application, Serial No. 76/572,253	)	
TriForest Enterprises, Inc.	)	
	)	Opposition No. 91165809
Opposer,	)	
v.	)	
	)	
Nalge Nunc International Corporation	)	
	)	
Applicant-Respondent.	)	
	)	

Commissioner for Trademarks
Trademark Trial and Appeal Board
P.O. Box 1451
Alexandria, VA 22313-1451

APPLICANT NALGE NUNC INTERNATIONAL CORPORATION'S NOTICE OF FILING DEPOSITION TRANSCRIPT OF SAMUEL L. BELCHER

Applicant Nalge Nunc International Corporation hereby submits to the Trademark Trial and Appeal Board a certified copy of the deposition transcript of Samuel L. Belcher, pursuant to Trademark Trial and Appeal Board Manual of Procedures, Rule 37 C.F.R. § 2.125. An appropriate copy has previously been served upon Opposer, TriForest Enterprises, Inc.

Respectfully submitted,

Dated: December 21, 2006

Theodore R. Remaklus, Esq.
Brett A. Schatz, Esq.
Sarah Otte Graber, Esq.
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Attorneys for Applicant
Nalge Nunc International Corporation

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail, postage prepaid in an envelope addressed to: Commissioner for Trademarks, Trademark Trial and Appeal Board, P.O. Box, 1451, Alexandria, VA 22313-1451, on December 21, 2006.

Anita L Freeman

Anita L. Freeman

CERTIFICATE OF SERVICE

I hereby certify that the foregoing **APPLICANT NALGE NUNC INTERNATIONAL CORPORATION'S NOTICE OF FILING DEPOSITION TRANSCRIPT OF SAMUEL L. BELCHER** was served by United States Postal Service as First Class Mail, postage prepaid, upon counsel for Opposer TriForest Enterprises, Inc., Clement Cheng, Esq., Law Offices of Clement Cheng, 17220 Newhope Street, Suite 127, Fountain Valley, California 92708, on this 21st day of December, 2006. The deposition transcript of Samuel L. Belcher was previously served upon counsel for Opposer TriForest Enterprises, Inc., Clement Cheng, Esq., on October 6, 2006.

Anita L Freeman

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

TRIFOREST ENTERPRISES, INC.,

Opposer,

vs. OPPOSITION NO. 91165809
SERIAL NO. 76572253

NALGE NUNC INTERNATIONAL
CORPORATION, A DELAWARE CORP.,

Applicant.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

DEPOSITION OF

SAMUEL L. BELCHER

September 19, 2006
8:57 a.m.

Sabel Plastechs, Inc.
2055 Weil Road
Moscow, Ohio

Karen M. Rudd, Notary Public in and for the State of Ohio
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

APPEARANCES:

ON BEHALF OF THE APPLICANT:
WOOD, HERRON & EVANS
BRETT SCHATZ, ATTORNEY AT LAW
2700 Carew Tower
441 Vine Street
Cincinnati, Ohio 45202

Deposition of Samuel L. Belcher

September 19, 2006

SAMUEL L. BELCHER of lawful age, Witness herein, having been first duly cautioned and sworn, as hereinafter certified, was examined and said as follows:

DIRECT EXAMINATION

BY-MR.SCHATZ:

Q. Sir, can you state your name for the record?

A. Samuel L. Belcher, B E L C H E R.

Q. And, Mr. Belcher, who do you work for?

A. I work for my own company, Sabel Plastechs, Inc.

Q. And what does Sabel Plastechs do?

A. Mainly consulting in the plastics industry. Most of the work is under secrecies with companies.

Q. Without getting into some of the specific things or projects that you work on at Sabel Plastechs, can you generally tell me what your day-to-day responsibilities are?

A. A lot of it deals with working

with the customer to figure out how to make the product he wants to make, choosing the material that we will use, working with the mold shops to produce the molds, and then finding a company that could produce the product for us and helping them start up actually doing the processing and starting the project up, and I will stay with the project until it's really off and running into, you know, commercialization.

Q. Are these projects involving plastic products?

A. They all involve plastic products.

Q. Okay.

A. Yes.

Q. And so you're involved with the selection of molds to make those plastic products?

A. We not only are involved in the selection of the molds, but we design the molds. I have people that companies have let go due to their age, maybe due to cutbacks, people that are semi-retired that I use. I actually say I have the best behind me of anybody, because I have the best choices to pick from.

So we will actually design the molds, we will select material, we will select machines in some cases, and we will recommend what's to be bought. Not all the companies listen to our recommendations, because mainly sometimes the price comes into effect.

But we will recommend what type of machines we think are the best for the project, and we can take them like that, you know, all the way in and have the molds built, design the molds, select the mold makers, and really work with the resin companies to get the best resin that we are going to use, the plastic resin, and make sure that it meets FDA, make sure that all the conditions are met that the customer wants in flavor taste transmission of maybe the product that's going in a plastic bottle or something else.

And so it's something -- it's a pretty involved project that we get involved with all the way from the beginning to when we walk away from it.

Q. And just to clarify, you used the term resin. I take it that's the material that forms the plastic product?

A. Right. You know, plastics is a big term, so we, you know, call it resin. You can call it plastic pellets. You can call it many things. But all we work with are the thermoplastics, which are the ones that you can remelt. And there's a difference.

But thermoset means it's like a melamine or urea. They are the types of products that basically once they are set by heat, they don't remelt again, and that was the old handles for the pots and pans, the black handles that you see, the old battery cases were made out of thermosets. But we only work in the thermoplastics.

Q. How long has Sabel Plastechs been in existence?

A. I started the company in 1987, so soon to be 20 years.

Q. And did you work in the plastic parts industry before creating Sabel Plastechs?

A. Yes, I have had the privilege of

working with most of the giants in the plastics industry. Coming out of college --

Q. Why don't we -- why don't you stop there just to do it in chronological order. Why don't you first tell me about your education.

A. Okay. I went to University of Akron and graduated with a Bachelor of Science in mechanical engineering. And after that, I went to work for Rubbermaid in Wooster, Ohio.

Q. In addition to your engineering degree at Akron, do you have any graduate degrees?

A. While working at Owens-Illinois in Toledo, I took an MBA at the University of Toledo. That was basically doing night school, and the hard way to do it, but a lot of us did that.

Q. Why don't you then tell me about your practical work experience relating to manufacturing plastic parts.

A. As I stated, I started at Rubbermaid in -- they were just getting into plastics, and they were mainly noted for rubber molding. Of course, I had co-oped at BF Goodrich in college and knew rubber molding from working with BF Goodrich, also plastic, because BF Goodrich was in plastics up at Avon Lake in Ohio.

And at Rubbermaid, I was one of the -- I was the only plastics engineer they had, and we started making dishpans, plastic dishpans, and then it mushroomed into wastebaskets and all types of products in plastics for the kitchen, for the bathroom.

And we built the big plant in Wooster, which is now closed, but at that time we were putting a machine in about once a week, building the plant, putting new products in, putting new machinery in. And basically I would take the product from the designers which we had and figure out -- we would do the drawings of the product, and then we would carry it on into the molds, and molds into the machines, and then we would start up the machines and make the first products.

And we made the first 32 gallon trash can ever made. We made the first hamper from plastic -- well, clothes hamper that was plastic. And while doing that, I designed a plastic spice rack, which was the best selling item Rubbermaid ever made, the little turntable, spin table, and they made it into a tool caddy and everything else, but it was very famous.

And we lost direction mainly because of Bob Connibear, who was the dynamic leader of Rubbermaid, and Sam Caldwell, who had founded Rubbermaid. And Sam had founded it by going door to door selling the rubber dustpan, and it was made of clay and rubber, and it was so heavy you could drop it on the floor, and it would sit there; you could sweep into it. But he founded it. In the depression years he did that.

And he would come up from Boca Raton. And I was running the machine one day, and I didn't know the man, and he told me to shut it down, that he was not putting his name on that product. And I went in and told my boss, Dick Lawhead, who was the vice president of research and development. And whatever happened after that, I don't know, but Connibear, Bob, who was head of marketing and sales for Rubbermaid, he resigned, went to J. Walter Thompson in New York and became the vice president, which is the largest advertising firm in the United States at that time. So Bob was dynamic. But we just sat, because no one was able to pick up behind him.

Q. Okay. While you were at Rubbermaid, then, you were involved in the design of plastic products?

A. Yes, totally.

Q. And did you also get involved with designing the molds to be used to form those plastic products?

A. Yes. Yes, also choosing the machinery. Yes.

Q. And when you say choosing the machinery, what machinery are you referring to?

A. At that time, we had injection molding, and we had, I don't know, probably 50 or 60 injection machines that we had brought into the plant.

We also brought two Fisher molding

machines in from Germany to make the water pitcher that they had that you had the handle on, you could pour water out of, and it became a very big hit. But the machines were terrible, and we had a lot of problem with the machinery. Somebody decided to buy them, and we shouldn't have bought those, but they were the first machines. This is, you know, the early '50s, early '60s, and there wasn't a lot of good knowledge out there in that area.

Q. When did you start working for Rubbermaid?

A. '58.

Q. And then what did you do after you worked for Rubbermaid?

A. Because of the condition at Rubbermaid, we weren't doing anything, I -- Dick told me, he said, Sam, we are not going to do anything until somebody takes hold of this company.

So I saw an offer from Owens-Illinois in the paper, and I talked to O-I up in Toledo, and so I left and went to Owens-Illinois in Toledo and went into the plastic products division.

Q. So you worked on plastic parts for Owens-Illinois?

A. At that time, O-I, naturally, was the leading glass company in the world, but our plastics division was growing very fast, and we were doing products for all the major companies, Gillette and Johnson & Johnson. Every company that was out there, we were trying to switch into plastics. Procter & Gamble, they owned Clorox at that time, so we did the Clorox bleach bottles.

And then I started the -- I was one of the four people in the United States to put the gallon milk jugs in, and so the gallon milk jug was one of our big things then, and we had it in a lot of our plants. And we did -- you know, we designed and also built injection molding. We designed and made the products for bottles.

We were just into everything, thermoforming, which is, you know, taking a sheet and heating it and forming it into some shape. And we actually did development in twin sheet forming, which was very -- no one else had been doing that.

We looked at that, and the company -- we really were looking to say where is the best market for O-I and the knowledge that we had. And we owned part of National Petro, which was a high density polyethylene plant, to produce plastic resin with USI, and National Distillers here in Cincinnati was part owner, and so we were producing our own polyethylene, high density polyethylene.

And I moved through, out of the plastics division into the Kimble division, which was our scientific division, and I started the plastic plant for Kimble where we had injection molding, we had blow molding, we had gas sterilization, we had insert molding, we had extrusion all in one big plant.

And after I did that, I went into corporate development, and we were looking at what else O-I could develop. And then later they purchased Lily Tulip, which was a disposable company making disposables for yogurt, cottage cheese and such.

And at that time, we wanted some

of the McDonald's business. So I worked at McDonald's for two weeks to learn McDonald's business.

Q. Didn't you serve the first Big Mac?

A. The first big breakfast ever served in McDonald's. But that picture there, Ray Kroc and myself and two other McDonald's people and Sweetheart, one day Ray called me in his office and said I want to put breakfast in the store.

And he says that Plasti-Shield that O-I makes -- which we did, we made a foam that wrapped the glass bottles, because it was -- we were vending the bottles out of machines, and you wanted to protect the glass so it didn't break, so we wrapped them in plastic foam.

And Ray said that Plasti-Shield, you know, I want something that will keep my hamburgers and everything fresh for ten minutes in heat, and I also want to serve breakfast, pancakes, sausage, things like that. So he says you come back here with something for me.

Well, I headed up product development for Lily Tulip then after we had bought it, and so in one week I walked back into McDonald's with the breakfast package that you see today that they serve. And then he said I want something for my Big Macs and things, and we came up with -- they called it Sam the Clam. I have pictures of it over here, of the clam shell.

And Ray says that's fine, only I want it printed. We had no idea how to print it. We knew how to print Plasti-Shield, but it was a very thin foam, but this was heavier, less dense foam. So we had to learn. But we did, we printed the Big Mac, the Big Mac and the quarter pounder with cheese, the fish sandwich, all the ones that they offered, and the salesman with me walked out with an order for one and a half billion packages. That was the first ones.

Q. Is it fair to say, then, while you were at Owens-Illinois in their Kimble division, that you continuously worked on plastic parts?

A. That's all we did.

Q. And you were involved personally in the design of blow molding machines?

A. Right. O-I, in those days, it was two big companies, Kahn Can and Owens-Illinois in the '60s in packaging, and we -- Pug Sherman, who I worked with, Pug actually designed the first BC-3 blow molding machine, and it was a unique machine for making bottles.

The big advantage that it had is that it had very low scrap or off fall, as they called it, and we actually compression molded the finish, which is a threaded area on the bottle. We call that the finish. And so we had a unique finish that we could put on a bottle that was very close to an injection molded finish and all good dimensions and everything.

And, of course, that led us into underarm deodorant, the roller ball jars that you get that had the little roller ball in the top, because we had an excellent dimension that we could snap the ball in, and it would retain it and not leak.

And because of our method of

making the bottles, also, you know, we had the Clorox business, we had all the baby powder sifter fit business. Because if you take a baby powder, it's one of the hardest things to hold that won't sift out the powder. We made the fitments, the closure that went inside, and inside was another fitment. And because of our method of making a neck, we could -- or the finish, we could do some things inside that nobody else could do. And so we had most of the baby powder, Mennen, J & J, everybody for quite a while, because it was all patented.

Q. We kind of went about that in a roundabout way, but just to ask my question again, while you were at Owens-Illinois in the Kimble Division, you continuously worked on the design of blow molding machines?

A. Yes.

Q. And you were also involved in extrusion, as well?

A. Extrusion, blow molding, and injection molding.

Q. And while you were at Owens-Illinois, did you also design or were involved in a flip top closure for detergents?

A. Right. Procter & Gamble was one of our big customers because of Clorox bleach, and at the same time they made Dawn detergent, and the original -- I don't know if you remember, but Ivory liquid, Ivory was in a metal can, and it had a plastic insert up in the top of the can and had a flip over top that you opened up, and then you poured out the liquid detergent. And P & G asked for something better.

So we actually designed the first plastic detergent bottle and, at the same time, came up with what I call the detergent flip top. And so I designed that, and that became the leading flip top detergent cap in the United States, and 30 or 40 other companies tried to copy us. But they did reverse engineering. They couldn't really figure out how we had done everything right.

Q. When you say you designed that flip top closure, did that include just the design of the product itself?

A. No. You can sit and design it on

-- you know, we used to do it on the drawing boards, because we didn't have CAD then, but we would design it, and then we would go over and work with the mold shop to make the molds, because there was always questions on fit, how things were going to fit together, what dimensions we wanted.

And then we would pick the resin. We would try different resins to make sure which one was the best. And then we would try it on the product, and then we would do product testing.

We had a testing lab right in O-I that we would do drop testing, we would do heat testing, cold temperature testing on the product. We would have products shipped in like from P & G, and we would put it in the bottles, and we would test it for leakage, we would test it for swelling, we would test it for stress cracking to make sure the package could hold what they had in there.

Q. And all of those steps from design until a finished product you were personally involved in?

A. Always.

Q. Then did you work for Wheaton after Owens-Illinois?

A. Yes. I left O-I, and then I took a job as director of research for Wheaton Industries down in Millville, New Jersey. And as such, Frank Wheaton, who basically ran Wheaton Industries at that time -- they were the best in injection blow molding in the world, and we built our own machines. We had our own mold shops.

I had a research -- I had about 50 people in research with me, and Frank gave me three challenges when I took the job. He says, one, I want you to do acrylonitrile, which was liquid paper, the little bottles for Wite-Out, that was acrylonitrile material, which is tough to run. But we figured out how to run it, and we produced 80 million a year for liquid paper.

Q. 80 million of the bottles?

A. Of the bottles, little Wite-Out bottles we called them.

And then he said also we want PET. I want to figure out how to make PET bottles. This was in the time when not many people understood PET. And so this was in '78 and '79. We had our own machines, and I had machines in R and D, I had my own tool shop, I had my own mold designers, I had my own research people for testing and everything there, and we actually designed the first PET injection blow molding machine.

Along with that, we designed the first molds, picked the material, and made the first Magic Shell PET bottle, which is sold today under the Smucker's label, but was owned by Foremost-McKesson at that time for the Magic Shell topping, the ice cream topping you pour on ice cream, and it hardens when you pour it on ice cream. And we put that into production.

And then Nyquil, which was Vick Chemical at the time, came to us and said what can you do for us? So we made the first Nyquil bottles and put those into production. And at the same time, we said, okay, we can go after the airline business, the little 50 ml liquor bottles. So we started making 50 ml liquor bottles for several companies. Hube Line was one of the companies. And so we started the business for 50 ml liquor bottles. And basically we had a patent on the PET processing on injection blow, so nobody else could do it.

We also used that machine -- General Motors came to us and said we want to make plastic front wheel drive boots for the automobiles, and we had no idea that we could even pass their test. But the idea behind it was that they wanted to put plastic boots on their car in the front wheel drives, and you had an inboard and outboard boot, and also you had rack and pinion boots under the hood, and the rubber boots would not hold up for the length of time that they wanted due to heat and just exposure outside for front wheel drive. And they didn't want you to buy a used car and know that you had to replace the boots.

So it was a big challenge for us to try to do that. And we actually did that, and we made the first ones commercial. Then we also did TRW's. TRW basically supplied Ford and Chrysler. And so we did the TRW front wheel drive boots and actually became a separate division of Wheaton that made the boots for the automobile industry. So we were very, very busy, and we had achieved everything that Frank wanted.

Q. Getting back to your work on plastic bottles. You said you were involved with designing a plastic bottle for Foremost-McKesson and also a plastic bottle for the Nyquil product?

A. Yes.

Q. I take it, then, you were personally involved in designing the bottle and the injection blow molded machines to make those bottles?

A. Yes. Yes. Nyquil, we made the first triangular bottle, and it is still made that way today. But one of the things we found after we had made it is that the panels when labeled, they would tend to not stay outward like they wanted, that they would tend to go straight. And Vick said, you know, it's a labelling problem to us.

So we sat down one day, and I came up with putting a rib inside that you couldn't see, it's inward, and it runs around the bottle on the inside. And so that's -- that gave reinforcement to the panel, and then you could make the labels and not have any problem labeling.

Q. After Wheaton, did you go work for Cincinnati Milacron?

A. Yes, I -- Milacron came to me, because we were so big in -- getting so big in PET, and naturally they wanted to do more in PET. So I came to Cincinnati Milacron here as development engineering manager for Cincinnati Milacron and took over all their PET development in injection molding and in blow molding.

And at that time when I was there, we had 80 percent of the PET machines and making of the bottles throughout the free world.

Q. Tell me about or just list for me some of the plastic bottles you were involved in designing and making while at Cincinnati Milacron.

A. Since we were kind of like the leader in everything, a lot of the companies, such as P & G, such as Colgate, Coke, Pepsi, all the others would come to us. We had a lab unit machine, and we had injection molding machines, naturally, and we designed the preforms and the bottles. And basically we would go ahead and make the first bottles for the customer.

Like we did the first peanut butter jars that P & G ever saw. They gave us the idea. We want a pound jar, and we want it to have a certain closure with a certain size lid to fit it. Crisco, we want to have a certain size bottle for Crisco, and we want a certain neck finish on it. And Colgate for their Colgate detergents, we did that. We did the Pine Sol bottles, which was then owned by American Cyanamid, which is now owned by Clorox for Pine Sol.

We kept doing the beverage bottles, the one liter, one and a half liter, the two liter, the three liter, all types of different shapes. Coke and Pepsi were very independent, and, in fact, you didn't tell what Coke was doing, you didn't tell what Pepsi was doing. There was a little bit of a shape difference to the bottles.

And the big thing was that the first bottle made for Pepsi, it was not a two liter, it was actually 64 ounces, and it had a base cup under it, injection molded polyethylene base cup. And that bottle weighed 67 grams, and naturally it sold for like 37 cents. And today you can go in the store and buy a two liter, and it weighs about 48 grams, so you can see how much has been saved, and there is no base cup.

We have taken tremendous weight out of the bottles. And it is always a challenge, because you are always looking at saving one gram or two grams. Even though you think it isn't big, but when you are making 30 billion bottles a year, one gram is 30 billion grams, which is a lot of money and a lot of savings.

Q. Based on your practical work experience, then, that we have just described, how many years of hands-on experience have you had relating to the manufacturing of plastic parts?

A. I hate to say it, but over 45 years.

Q. And did those years of experience include injection molding?

A. I have done most of the things that you can do to make a product. I have done injection molding, blow molding, extrusion, thermoforming, twin sheet forming, rim, rotational molding. That's about every process that's out there that I have done.

Q. So you were involved in all of those processes during your 45 years of practical experience?

A. Yes. Yes.

(Thereupon, Applicant Exhibit-57 was marked for purposes of identification.)

Q. I'm going to pass to you what has been marked as Exhibit 57. I want to ask you a few questions about some of the publications that you have been a part of. I can direct your attention to page 14.

First of all, can you identify what Exhibit 57 is?

A. Oh, it's the report to you in regards to what you had asked me to do for you in regards to this case.

Q. Okay. So Exhibit 57 is your

expert opinion in this case?

A. Yes.

Q. Okay.

A. Yes.

Q. That being said, why don't you turn to page 14, and why don't you -- it looks to me like there are at least seven or eight different publications that you have authored with respect to the engineering and design of plastic parts; is that accurate?

A. Yes.

Q. Why don't you in a very general way explain to me the subject matter of those publications.

A. Well, I have given a lot of papers at technical meetings relative to PET, which is polyethylene terephthalate, we call it PET, or another name is polyester, but I have -- I actually wrote a lot of papers and presented papers on PET in Canada, the US, Japan, Mexico, Europe. Because at that time, we were basically teaching the rest of the plastic industry how to run PET, how to make PET bottles, how PET behaves, how to stretch blow it, what type of heats you need. We were really the front leaders on how to run or make a PET bottle.

Q. When you say we, who are you referring to?

A. Milacron. We were the leaders not only because of our knowledge, but when I was there, we developed -- we had the original machines that had CalRod heaters on them, which were infrared type heating which your stove top has. They were not that efficient. They are only 46 percent efficient brand new. So we developed the use of quartz lamps, and I worked with GE up in Cleveland and developed the first quartz ovens that were put on the machines.

And then later we tried to make a beer ball, which no one had ever tried to do. In fact, Goodyear said it was -- you couldn't do what we tried to do, and they were one of the leaders in PET production of plastic resin. They had a good research team. But we were challenged, and we said, okay, we think we can make it to hold five to six gallons of beer.

And we designed the preform, and

we found a company up in Dayton, Broadway Company, who made the first PET preform ever injection molded, and we went to them and had them actually produce the preform for us. It weighed almost 270 grams, and the wall thickness was over 235-thousandths, which nobody knew how to heat.

And we developed the radiofrequency oven, which is RF we call it. And PET heats very readily in RF, because you excite the electrons with it in the preform, and it heats rapidly. So we developed that and we made 12 machines to make beer balls for Coors and Metal Box in England, and I don't know how many other breweries were in the business at that time.

Q. Getting back to your publications then.

A. Yes.

Q. How many publications relating to the manufacturing of plastic parts have you authored?

A. I really can't give you the exact number, but most of the books that are out there today I have written the chapters on blow molding. The Polymer Book in England, the Comprehensive Science Book, my chapter on blow molding is in that. The Handbook of Blow Molding, I have the two chapters on injection blow molding and stretch blow molding. Then the SPI, Society of Plastics Industry, Plastics Engineering Handbook, I wrote the chapter on blow molding for that.

I also published the book Practical Extrusion Blow Molding. It was put out by Francis and Taylor. And I just finished a book on injection blow molding, which will be published in November by Francis and Taylor on injection blow molding, Practical Injection Blow Molding, where I discuss everything from how to design the bottles, how to -- what machines to pick, the advantages, disadvantages.

And I have given a lot of papers at SPE seminars, Society of Plastics Engineers, at the Rider Conferences, which was now changed, but then it was the Rider Conference. I would give papers at the Rider Conference on how to design and produce PET items. I did PVC, because PVC in Europe was big, and they wanted to know how to make PVC bottles and stretch blow, which we did.

And, basically, I think I have covered all the areas of how to do something in blow molding from designing the bottle, picking the resin, picking the machines, and actually passing your testing that you need to do with the products.

Q. Have you ever served as an expert witness in a court proceedings based on your experience in plastic parts?

A. Yes.

Q. How many times?

A. I think I have listed in this exhibit about 14. There may be more. I don't really keep a definite track of them. I should, but I don't. I have been involved in quite a few patent infringement cases, because I have 58 patents, and I do get involved with that in regards to patent infringement. I get involved in injury cases, where someone gets hurt on a machine, or actually also where a company may have purchased a machine and it didn't live up to the expectations.

Q. On page 15 of your opinion, that is Exhibit 57, you list several lawsuits in which you have served as an expert witness. Is it fair to say that your experience in plastic parts, including the design of plastic parts and the machines that make those parts, were an issue in each of those lawsuits?

A. Yes. Yes.

Q. Based upon your education and the experience that we have gone through earlier today, do you have personal knowledge regarding the manufacturing of plastic parts?

A. Yes.

Q. Do you have personal experience regarding the manufacturing of plastic bottles?

A. Yes. You can see up on the wall there's a clock Milacron gave me that says to Sam the Bottle Man, and that's referring to one of my friends on the SPE Blow Molding Board of Directors entitled that name to me, and it stuck with me.

Q. Are you considered by your peers as an expert in the design of plastic parts?

A. Yes. Yes.

Q. Let's take a look at Exhibit 57 in

a little more detail. If I can direct your attention to page five. In the third paragraph -- actually, let me step back.

In preparing your expert opinion in this case, have you reviewed what I will call the Nalgene narrow mouth bottle and its silhouette to develop your opinions?

A. Yes, I have.

Q. And in paragraph three on page five, the third sentence in, you make the statement, a round plastic container is not necessarily the lowest cost container to produce, period, close quote. Why don't you explain that statement to me.

A. Well, you know, most people will look at a round bottle and just say, well, that's got to be the lowest cost to be produced because it's round, and it should use less material, but you don't know that. There's too many other factors that come into play.

Just not knowing the weight of the container, how much material is in the wall thickness, how much is in the base of the bottle, there can be many grams wasted in a bottle design. And the shoulder design is another area that you have to be careful.

Up in the finish or the threaded area, whether it's a snap cap or a thread finish, you can have wasted material that isn't necessary to be there.

And so you just might say, well, that's a round bottle, that's got to be the lowest cost. Not necessarily. There's too many other factors that you must consider even all the way back to the molds, to the machine, to the resin chosen. I mean, everything that goes into that bottle is a lot of engineering time and talent, and just to make that statement you should not make it.

Q. Okay. And we will get into detail about each of those factors that can affect the cost of manufacturing a plastic water bottle. But before we do that, let me just ask you a few general overall questions.

I'm going to pass to you what's been previously marked as Exhibit 16. And based on your comments that you just made, is it your opinion that a bottle that is designed consistent with Exhibit 16 is not automatically going to be a cheaper bottle to manufacture as compared to a bottle that looks different than Exhibit 16?

A. That's very true, because there's too many unknowns.

Q. Okay.

A. Too many unknowns.

Q. And let's go through some of those. Is it fair to say that, for example, the wall thickness of a given plastic bottle can have an impact on the cost of manufacturing?

A. Definitely the wall thickness, how many grams are in the container. You might want to say I want an average wall thickness of 20-thousandths, yet you might have a bottle that has a wall thickness of 40-thousandths, and until you actually weigh the container or look at the wall thickness itself, you don't know that.

Q. Okay. So if a bottle were made consistent with Exhibit 16 and had a wall thickness greater than a bottle that was made to look different than what's described in

Exhibit 16, then the bottle described in Exhibit 16 could be more expensive to manufacture than the other different looking bottle, correct?

A. That's very true. You leave too many things out in the open. You didn't say how am I going to do it. How am I going to manufacture the bottle? You didn't say what resin is used. You didn't tell me the process, whether it's injection blow or extrusion blow. You didn't mention if it was transparent or not transparent. That's a choice of materials right away you give me. There's so many questions that you didn't answer.

Q. Okay. But just for the -- this one specific factor, the factor of a given wall thickness, that could have an impact on the cost of manufacturing, such that a bottle made consistent with Exhibit 16 is not necessarily less costly to make than a bottle that doesn't look like Exhibit 16?

A. That's correct.

Q. Okay.

A. Yeah. Yeah.

Q. Then let's talk about the impact that the design of the blow mold has on the cost of manufacturing.

A. Well, any time you look at how you are going to make a bottle, you have got to think of you have got heat in, you have got to take heat out, and you have to get the heat out quickly. So when you look at building a mold or designing the mold, one of the first things you think about is I'm going to put water in the mold to cool the part that I'm going to make inside the mold.

And there you could say, okay, I'm going to use aluminum, because the conductivity of aluminum is very good. You could say, well, I could use steel. Yes, you could use steel. I could use beryllium copper. Yes, you could use beryllium copper. You could use Ampcoloy. There's several choices of materials that you could use to make the molds, but how your choice comes about is what type of cycle time, how many bottles per hour you are going to be able to produce and not have the problems of shrinkage, that the bottle comes out of the mold and shrinks too much, or the fact that the bottle is not dimensionally stable.

And all of that comes back into how you design your molds, the type of cooling you put in, how fast the resin gives off its heat, and each one of those have to be considered when you do mold design.

I didn't even mention venting. When you think of you're dropping a parison or preform inside of the cavity of a mold, the female, you are going to say I'm going to expand that bottle rapidly with some gas, in most cases it's air, and that's going to blow against the sides of the molds rapidly.

And, in fact, you would say we can make a two liter in three-tenths of a second. So that means the air that's trapped has to get out. And the only way you know how to get that out is to put vents in the mold so that there's a place for the air that's inside between the parison and the mold to get out, and venting of a mold is very critical.

Q. So is it fair to say, then, that the design of the blow mold and the design of the venting process can impact the cost of manufacturing of a plastic bottle?

A. Very definitely.

Q. Okay. So then if one were to design a bottle that looks different than what's described in Exhibit 16, were designed to be manufactured and the blow molding and the venting was designed, let's say, in a very efficient manner for that particular design, is it possible that that design could be less costly to manufacture than the bottle depicted in Exhibit 16?

A. It's possible. But, again, you may have chosen the wrong machine. The machine that you pick to make your bottles is very important also. It may not be able to cycle fast enough, the one you buy versus the one I buy. I might be able to cycle my machine faster than you can and, therefore, even though I'm making a different bottle, I might have a more inexpensive bottle than you, or you may have a more inexpensive bottle than I do.

Q. To sum that up, then, a bottle that's being manufactured that doesn't look like the bottle described in Exhibit 16 could either be less expensive to manufacture or more expensive to manufacture, or it could be equal in cost to manufacture as the bottle in Exhibit 16 depending on the blow mold design and the venting design?

A. Depending on blow mold design, venting design, machine, there's so many avenues you have to look at.

Q. So the answer is yes?

A. Yes. Yes.

Q. What about the design of the parison? Does that also impact the cost of manufacture?

A. The parison, it really -- you really have to know how to design your parison to achieve the lowest cost, and not only the lowest cost, but the best bottle that you are going to produce.

You have to take into account -- let's say you are using injection blow molding. In injection blow, basically the parison is carried on a steel core rod or some metal core rod, and it is supported on that core rod. Now, it has to lift off, and you are only blowing it in the hoop direction, or in the diameter direction. You are not stretching it actually. You are just blowing it outward. And how much material you put in the parison, where you place it, if you are making a round bottle, that's a little bit different than making an oval bottle, and how I would get my material out to make sure that the oval container has thickness out on the edges versus a round bottle, which is a lot easier to make, because I don't have to worry about getting out to the extreme corners. So the parison design -- not everyone knows how to design a good parison.

Q. So depending on the parison design, a bottle that is made to look different than that described in Exhibit 16 could be cheaper to manufacture; is that correct?

A. Could be lower cost, yes.

Q. Would that include potentially a rectangular bottle?

A. It could. It depends on your parison design. There's so many other things that have to come into play that you just can't say, well, that's got to be the easiest cost to produce because it's round. You just can't do that.

Q. I would imagine that resin costs would also impact the cost of manufacturing a given bottle?

A. Resin costs is one of your major factors. We sometimes look at bottles and basically say that roughly anywhere from 40 to 60 percent of the actual cost of the container is in the resin cost.

And after that, then you have to look at the utility cost, which is electrical energy. And years ago we never really paid a lot of attention to energy costs, but today with the climbing energy costs, that's being a major concern when you are producing.

Q. And labor cost also impacts the cost of manufacturing?

A. Labor cost has a big effect on it. But today what's challenged the industry is to go to robotics, picking places to ease the labor because of healthcare costs.

Q. Well, that's a good point then. So if a manufacturer of water bottles could automate, let's say they had the capital resources to automate their manufacturing of plastic bottles, then they could theoretically have lower costs of manufacturing?

A. Sure.

Q. Let me just summarize some of the things that you have said then. My understanding is that the following factors impact the cost of manufacturing a plastic bottle, wall thickness, parison design, blow mold design, venting design, resin costs, utility costs, and labor costs; is that correct?

A. Yes, plus the machine.

Q. Plus the machine costs?

A. That's a real big factor in -- you have a lot of machines to choose from in most cases. Which one you choose is very important.

Q. Okay. All those factors, given that they do have an impact on the cost of manufacturing a plastic water bottle, is it fair for someone to simply look at the silhouette of a bottle and compare it to the silhouette of a bottle that looks different and make a claim simply by looking at the silhouettes of the bottle that one is more expensive to manufacture than the other?

A. No.

Q. And is that because one could not just look at the silhouettes or the designs of the bottle, but rather they would have to take into account all of these other factors to make an accurate assessment of the actual cost to manufacture?

A. Yes.

Q. So just to go with that a little bit further then, are you -- in preparation of your opinion in this case, have you reviewed some of the comments made by Mr. Steve Lin?

A. Yes, I have.

Q. Okay. And do you understand Mr. Lin to be stating his opinion, that Exhibit 16, or a bottle manufactured to look like Exhibit 16, to be necessarily cheaper to manufacture than a bottle that does not look like Exhibit 16? Is that what you understand him to be saying?

A. That's what he leads you to want

to believe, right.

Q. And --

A. It's a poor statement.

Q. And based on what we have talked about, why don't you explain why that's a poor statement?

A. Again, unless you -- if you are just looking at a bottle, and let's say a water bottle, and I could cite right now if you took a sports bottle, we call it a sports drink bottle, and look at it, naturally the first thing, they are transparent, water clear. You want to see the water. So he probably looked at this and said, well, each bottle is clear.

Well, they are -- let's say they are transparent. You didn't know the resin. You really didn't know which one is made out of PET, which one is made out of PVC, which one is made out of polycarbonate. One of them could even be made out of styrene.

So you don't know that just by looking at the bottle. You don't know how it is manufactured until you pick up the bottle and look at it and be able to tell does it have a tail scar at the base, which means it would be extrusion blow molded, or does it have a gate where you can see where the material entered into the parison, meaning it would be injection blow molded. So a different method was used.

There's so many things, and just looking at it, I could set two like bottles next to you and have you look at them and say they are both the same in cost, yet I didn't tell you that the neck finish or the threaded area I have two grams less than you do.

Q. Two grams of material?

A. Two grams of material. And if you would say, well, I'm putting 28 grams in it and you are putting 26 grams in it, I already have less expensive material usage than you do. And just looking at the bottle, you would not know that unless you did some measurements and some weight.

Q. Is it fair to say, then, if -- to make the statement that Mr. Lin makes, that is that a bottle manufactured to look like what's described in Exhibit 16 is cheaper to manufacture than another bottle, he would necessarily have to analyze the wall thickness, the parison design, the blow mold design, resin costs, labor costs, electric costs, and vent design?

A. Right. He would have to also look at machine cost, how many bottles per hour he is going to be able to produce. That's a critical factor, what's the cycle time that this machine can produce this bottle. You know, if you are putting 3,600 bottles an hour out and I'm putting 4,800 bottles an hour out, which one is going to be more inexpensive to produce. So all of this has to be factored into it.

And the design of the bottle, just looking at the bottle, there's certain tests that you have to run, like a drop test. Will it pass a four foot drop test filled? Will it have an impact for filling? In other words, the shoulder, is it strong enough so when the filler valves open and close, that the neck or the bottle doesn't collapse while you are trying to fill it?

So you have to look at all the

design conditions also of the bottle, and that's why I keep saying you have got to look at the total picture before you make a statement about which is inexpensive to produce versus another bottle.

Q. Okay. So is it fair to say, then, it's your opinion that Mr. Lin's comments are made without looking at all the factors that would be required to actually make that statement?

A. He has made a statement without any foundation behind it.

Q. Are you familiar with Nalgene?

A. Yes, I am.

Q. You are familiar with their water bottles?

A. Yes.

Q. Do you know Nalgene to be a quality manufacturer of water bottles?

A. Yes.

Q. And do you know them to have experience in manufacturing plastic bottles?

A. Yes.

Q. Based on your knowledge of Nalgene's experience in manufacturing water bottles, would it be your assumption that Nalgene knows how to manufacture water bottles in a very efficient manner?

A. Yes.

Q. So if Nalgene were to be able to manufacture a water bottle like that described in Exhibit 16 in a way that's less expensive than a competitor could manufacture a water bottle that looks different than what's described in Exhibit 16, is it possible that Nalgene's ability to do that is because of its experience in making water bottles?

A. You have to say the whole facility's, not only the people, the professional attitude in the company, mold design knowledge, machinery design knowledge, choice of materials. You can go to a resin company, and they might offer you three different materials that you could use, but picking which one to run better for you in the production machine --

Yes, it's very possible, and it all goes to the experience of the people and how they approach the problem of producing the bottle.

Q. So if Nalgene were to manufacture a bottle like Exhibit 16 in a way that's less costly than a competitor makes a water bottle that looks different than Exhibit 16, the ability of Nalgene to do that is not necessarily due to the design of the bottle itself?

A. That's correct. Further to that, you could say I could put another bottle that looks just like it next to it, and you still don't know which one is the least inexpensive to produce.

Q. Taking a look at the closure of the water bottle described in Exhibit 16, how many different components are there?

A. Well, if you look at Exhibit 16, actually there's three molds involved, one mold for the bottle, one mold for the -- let's say the closure, the main closure, which has the threads and engages on the finish of the bottle, and then you have the strap, which is also another injection molded part that has to be produced. So you have three main molds that you have to contend with.

Q. Is there also a mold associated with the button?

A. No, that would be done either by heat sealing or ultrasonics that you could attach that. You could snap fit it too.

Q. Okay. Is the button, before it gets ultrasonically welded to the enclosure, is it a separate piece?

A. Not a separate piece, no.

Q. Okay. Are you aware of water bottles in which less than three molds are required?

A. Yes. Yes.

Q. And the more molds, I take it, mean more cost to manufacture?

A. It's capital cost that you have to put out up front to produce the product, and how you -- how each company controls their capital costs, building molds, how long you put the life of the mold, how many cycles it's going to -- you know, we figure a mold is good for five years. Sometimes they are not used for five years, but we tend to spread that cost over five years.

Q. Generally speaking, then, with

respect to a water bottle that could be manufactured with only two molds, would that typically have less cost involved versus the three molds required by Exhibit 16?

A. It should have, but it doesn't necessarily have to have, because, again, where did you produce the mold? Did you go to China, or did you produce it here in the US? And how many cavities does your mold have? All of that comes into play.

But generally if I don't have to invest in three molds, my capital cost would be lower, so I don't have to spread that cost over so many more parts.

Q. Okay. Other than ultrasonically welding the button to the top of the enclosure, what other options are available?

A. You could snap fit it. You could also heat seal it. I mean, there's a possibility you could even spin weld it if you wanted to. There's all types of possibilities, but naturally you are going to look at the one that's most efficient for you and the one you have the best knowledge on.

Q. If a manufacturer was experienced

in the snap fit option that you mentioned, could that be or could that result in less manufacturing time than the ultrasonic welding process?

A. Yes.

Q. And would that possibly then result in a lower cost to manufacture by using the snap fit?

A. Could possibly.

Q. I'm going to pass to you what has been previously marked as Exhibit 30. Have you seen Exhibit 30 before?

A. Yes.

Q. I want to draw your attention to page seven of your opinion. Looking at the third full paragraph, which is the fourth paragraph on page seven, tell me about your thoughts regarding Exhibit 30.

A. Basically, as I stated, that if you just looked at the photograph or container itself, it could be no more costly or differently manufactured than the Nalgene bottle. Your closure could have less material. The strap itself could be -- have less material in it. The bottle itself could have less material in it. You can't tell that by just looking at the picture unless you actually did some engineering details on it, then you could tell.

Q. The same question, then, for Exhibit 34. Have you seen Exhibit 34 before?

A. Yes, I have.

Q. And why don't you tell me your thoughts about Exhibit 34.

A. Again, now, in this case, it does tell you they are made of Lexan, which is polycarbonate, so you know that the cost of these bottles is inexpensive. It's what we normally refer to as inexpensive materials, under a dollar a pound. Lexan is more expensive than that. We would also assume that they are transparent or water clear of some type.

The bottles themselves, if you notice the -- it could be less expensive to produce than the Nalgene bottle, or they could be more. Again, you would have to examine the bottles in detail looking at the closure, looking at the bottle itself, how much weight, how much wall thickness, what size they are, how many ounces they hold.

Q. Are you familiar with what's known as a Boston round bottle?

A. Yes. That term, as I stated in my write-up, that when working at O-I, we were so big in glass, the world's largest glass company at that time, the Boston round, I could talk to the glass container people, and they would say, well, you are doing a typical Boston round.

It was really a generic term in a way, because we modified it, and so many companies do because of the conditions your customer gives you in top load, how much top load does it have to take. So that really starts you thinking of how am I going to design the shoulder of the bottle.

Also in filling, you think do I have to worry about filling. Yes, you do, because some products foam. And how your valve lets the material come in and fill, if it is liquid, that it doesn't cause foaming inside the bottle. So we look at the shoulder.

And the Boston round is a term

that basically says it's a round bottle with a sloping shoulder. Could it be an angled shoulder? Yes. It could be a compound shoulder. It doesn't have to be just a curve. You could have partially a curve in it, and how that connects to the finish is another condition that you have to worry about, the finish being the threaded portion.

We always looked at that area, because if you would want to put a strap under it, you have to design for that strap. And if you are going to say something is going to be picked up by a machine, do I have to allow for something to pick that up. And, you know, capping rings, we call them capping rings on top of the bottles, the capping ring was used on the first beverage bottles, and we used to call it the bumper roll in glass, the old milk bottle bumper roll.

Well, it is called the capping ring today, but we used it because the first closures we put on the PET soft drink bottles were the Alcoa spin top aluminum, and it took 90 pounds of top load. So we knew the bottle could not support 90 pounds of force coming down on it to put the closure on.

So we put a capping ring under the neck finish, and basically as it came down the line, a little fork, metal fork, would come under the capping ring and support it while the Alcoa capper came down to put the cap on and spin it. So you have to think of all of those things when you are designing the bottles.

Q. Okay. So I take it, then, that a Boston round is not one bottle design in particular?

A. No.

Q. Okay. I take it, then, Exhibit 16, if you are just looking at the bottle -- let me say that better.

Based on your comments, I take it, then, that the body of the bottle described in Exhibit 16 is not necessarily a Boston round?

A. Not necessarily, no. No.

Q. Because the slope of the shoulder doesn't necessarily equate to a Boston round?

A. It's basically a generic term that

you might call it a Boston round. Another designer might look at it and say, well, that's really not a true Boston round. My true Boston round has a different taper coming off the neck finish here. And can you argue it? No. It's a generic term that is very poorly defined.

If you look through some of the exhibits that I did, some called it a modified shoulder, some called it a soft shoulder. So whatever you want to use in your marketing or sales brochures -- did you say this is a typical Boston round? Probably most people that read that, unless they are really in the bottle industry, wouldn't even think, well, what is a Boston round?

Q. Moving to page eight of your opinion, the last paragraph. You refer to a statement made by Mr. Lin that is, quote, the opaque screw cap is cheaper and softer. It would be more difficult to make a transparent cap, close quote. What's your opinion regarding Mr. Lin's statement to that effect?

A. Well, that statement is incorrect in both comments. That the opaque screw cap is cheaper, any time you can use the basic resin or plastic, which will normally be a water clear or it could be an opaque, that's the lowest cost you are going to have to make the cap or the closure. As soon as you add a colorant to that that gives it a tint or a hue or something else, you have added cost to the basic resin. So when you say a transparent cap or an opaque screw cap, that means you added colorant to it.

Q. The opaque?

A. Opaque meaning you can't see through it.

Q. So opaque, you have added colorant to it?

A. You have added some colorant to it. And most resins, like polyethylene or propylene, they are semi-transparent. They are not water clear, but they are semi-transparent. The opacity, as soon as you say it's opaque, you have added something to mask the basic material.

Q. And I take it that means that you have added cost?

A. You have added cost.

Q. So the opaque screw cap is actually more expensive than a transparent screw cap?

A. That's true. And the other thing is he said it is softer. What did he do to make it softer? What did he add?

Q. So to make an opaque screw cap softer, you would have to add cost to the manufacturing process?

A. You would have to do something or else you can't use too soft a closure, because if you do, it's going to strip when you screw it on, and you don't want the housewife or the person using it to have to turn the cap and have it strip, and then you have a leaker.

Q. Mr. Lin also says that, quote, it would be more difficult to make a transparent cap, period, close quote. You believe that that's incorrect?

A. Totally incorrect.

Q. Why is that?

A. Because transparency means it's a basic resin. And let's say that you would run a clarified propylene. That will give you a transparent cap. We didn't add anything to it. That's the way you can buy the material. There's no additives to it. The clarifier is there.

You can go in the store, you can find many, many containers sold in the industry today that have just the basic resin as the cap or the closure.

Q. And, therefore, it's cheaper and easier to manufacture?

A. It's the lowest cost. I didn't put any color additive or any slip additive or anything else to it to make my cap or my closure.

Q. Turning to page nine of your opinion, there's a discussion of two ratios that sometimes are used to describe a bottle, the first of which is the ratio of the diameter to the overall height of the bottle, and then the second is the ratio of the height from the bottom to the neck versus the overall height of the bottle.

I will represent to you that in the trademark sought by Nalgene, the two ratios that they have identified in that market are .4 and .8 respectively. That being said, do those ratios necessarily dictate a more functional water bottle design?

A. No.

Q. Do those ratios necessarily dictate a water bottle that is less costly to manufacture?

A. No. I stated in my opinions here that really I have never given any thought to those ratios in bottle design.

Q. Does that include you have never given thought to those ratios to somehow minimize manufacturing costs?

A. That's right, I haven't.

Q. Because they don't impact manufacturing costs?

A. Not -- there's too many other conditions to worry about the ratios here. First of all, you have to say, well, how many ounces will my bottle have to hold? What is the use of the bottle? You know, am I going to have a bottle that I have to put my arms around to carry, or is it going to fit into my hand? Is it going to fit into a child's hand?

Right away when you do that, you have to say, okay, here's a certain diameter I'm going to be into. Then you have to say, well, what type of a closure or what type of an opening am I going to put on it? Because the customer says, well, I have to drink from it. That means you might put a bigger opening than if you were going to just pour from it or something. So all of these factors come into play.

Did I worry about the ratios? No. I'm worried about top load. I'm worried about the material usage. I'm worried about how it is going to be used, how it is going to be filled. And basically if I happen to hit those ratios, it so happened. I didn't try to hit those ratios at all.

Q. Are you personally familiar with water bottles that look different than Exhibit 16, but still have a ratio of diameter to overall height of the bottle of around .4?

A. Yes.

Q. And are you familiar with water bottles that look different than Exhibit 16 and have a ratio of height between the bottom

and the neck versus the overall height of .8?
A. Yes.
Q. Looking at Exhibit 16, you will notice that the shoulder has a particular slope. Is it possible to manufacture a water bottle with a slope that is different than that depicted in Exhibit 16, yet would have the same strength?
A. Yes. There's nothing in this bottle that says that I can't put, oh, let's say little reinforcing ribs up under that shoulder area. You can do many little things. You might even do it for decoration to make it more appealing to the customer. You could put little stars. You could do all types of little things.
Any time you change that section a little bit like that, you will usually increase that area's strength. Now, so looking at this, it doesn't show that, but I could make a bottle, you know, that has better strength than that too.
Q. And you could do that without impacting --
A. My cost.

Q. -- significantly the cost?
A. Yes. Yes.
Q. Okay. Solely by the design of the bottle depicted in Exhibit 16, does that put the manufacturer of that bottle at a competitive advantage over competitors from a cost of manufacturing standpoint?
A. I don't think so at all. I would have to say that my first thought looking at this would -- that closure is expensive, and one of the first thoughts I would have is I need -- I know what he is trying to achieve. I want the closure to stay with the bottle when I open it. I don't want to have to lay it down or something. But I would look and say how can I cut my cost right now on that closure cost?
And, you know, also, everything else we discussed in materials, thickness, weight, and everything, molds, all of that comes into play. But the first thought you have to look at and say where can I save money, and you can almost duplicate it and have a more inexpensive bottle.
Q. Do you think you could design an

enclosure assembly that costs less to manufacture than the closure described in Exhibit 16?

A. Yes.

Q. In your prospective design, could you design it so that the cap is retained by a tether?

A. Yes.

Q. And do so, but still make it cost less than Exhibit 16?

A. Yes. Yes. I think it's a challenge that just because you have -- you know what the condition is there, then basically you have to sit down, say, okay, what can I do to better it? What can I do to ease my manufacturing? What can I do to save on mold costs?

And then you put those conditions down, say, okay, I want the same principle to be there, but can I do it a different way? Yes.

Q. I'm going to line up for you some exhibits that we have already marked in this case, and they are Exhibits 46 through 51. Have you seen these exhibits before?

A. Yes.

Q. Have you had an opportunity to manipulate them and look at them?

A. Yes.

Q. Okay. Is it your opinion that if a manufacturer of each of these water bottles were to employ efficient parison designs, blow mold designs, have the same resin costs, have the same labor costs, have the same electric costs, all those factors that we have talked about today that may impact the cost of manufacturing, can these Exhibits 46 through 51 be manufactured at a cost that are relatively equal?

A. I'd say no, there's too much difference. You have got polyethylene in the canteen.

Q. Which is Exhibit --

A. Which is Exhibit 46. You also have colorant, the green, if you want to call it green. This is extrusion blow molded, which means it's going to be a slower cycle, less output per bottle per hour. So this is not going to be a real inexpensive bottle to produce.

The closure is very similar to what the other one has, but it is retained by a tether. There's a lot of material used in it, so you could save some cost. It's also been extrusion blow molded, and you have flash up around the top where they have the compression molded neck finish. If they take material out, they can save material.

(Thereupon, an off-the-record discussion was held.)

THE WITNESS: But looking at -- let's say looking at item 47, now, here you know as soon as you look at it, it is injection blow molded. Very similar to Exhibit 16, it is transparent. It does have a color to it, a tint. This cap is very similar to what you have on the Exhibit 16. So it could be very close to it in cost.

Now, then you go to the Exhibit 48. This is also injection blow molded. It does also have a colorant. It also has a tethered cap, but it could be less material in it and more material in it. It looks to be pretty simply made. But it's not the same size, so the same material costs wouldn't be applied. It's a little bit smaller bottle.

Q. Is it fair to say, then, that Exhibit 48, in your opinion, would be cheaper to manufacture than Exhibit 47?

A. I think it would be less expensive to make, yes. Yes.

Then when you go to Exhibit 49, again, this is high density polyethylene. Here you are comparing a material that cost maybe 60 cents a pound versus polycarbonate, which is about 1.80 more a pound. So you see right away there's a significant difference in cost.

Q. That is, Exhibit 49 is cheaper to manufacture?

A. Yes, it should be because of the material costs in it.

Q. What about the enclosure assembly?

A. The enclosure, it is not as, 1.80 say, inexpensive to produce. You have an extruded tube you have to buy or else make yourself. You have to fit -- this is a mold here, a mold here, so you have two molds and a mold for the bottom. You have three molds, plus the extruded tubing, which somebody had to make a mold.

So, yes, it's probably a little bit lower cost to produce than the tethered type closure just because of the tubing. This runs very fast, inexpensive.

This silver closure is small. This is relatively small. They have saved a lot of weight. So it could be that that is, you know, a way of cutting the costs down. So it would be more inexpensive to produce.

Q. That is, Exhibit 49 would be less expensive to produce?

A. That's right. When you go to Exhibit 50, which is a Nalgene bottle, which is injection blown, it does have a color. The closure I think is a very expensive closure. Anytime you have a finger grip like this, and you notice this is a one, two, three-piece again, you have three molds involved, but the other thing is a finger hold. That means you have to put a slide in here to do that. Now, any time you put a slide in a mold, it's expensive, and you have got to figure how to get water in between this.

So this would be an expensive closure I think to produce. There's ways to cut costs, but I don't think it would be inexpensive.

When you look at the last one, Exhibit 51, this is also injection blow molded. It does have a gray tint added to it. The closure is expensive. They have a triangular strap like going over another part of plastic to hold it and have it attached to the tether. This is really, I think, an expensive waste of material here.

Q. Could you design the cap of Exhibit 51 such that it doesn't use so much material?

A. Yes.

Q. And would that -- could you do that in a way that would make it less expensive to manufacture than a bottle depicted in Exhibit 16?

A. Yes. But each one you have to look at independent what closure is on it, what is the size of it, naturally how many ounces does it hold versus the other size, what type of method is used in manufacture, injection blow versus extrusion blow. Injection blow is normally chosen because it has high output and it makes a pretty uniform container wall thickness-wise.

Now, the drawback is that it is expensive to build the tooling because of the -- you have to build injection mold tooling, you have to build blow mold tooling, and in extrusion blow molding, all you have to produce is the extrusion blow molding. So you have a difference in total tooling cost, yes.

MR. SCHATZ: Well, Mr. Belcher, thank you very much for your time. I don't have any other questions, so thanks again.

THE WITNESS: You are welcome.

(Thereupon, the deposition was concluded at 10:33 a.m.)

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STATE OF OHIO)

COUNTY OF MONTGOMERY) SS: CERTIFICATE

I, Karen M. Rudd, a Notary Public within and for the State of Ohio, duly commissioned and qualified,

DO HEREBY CERTIFY that the above-named SAMUEL L. BELCHER, was by me first duly sworn to testify the truth, the whole truth and nothing but the truth; that said testimony was reduced to writing by me stenographically in the presence of the witness and thereafter reduced to typewriting.

I FURTHER CERTIFY that I am not a relative or Attorney of either party nor in any manner interested in the event of this action.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of office at Dayton, Ohio, on this 28th day of September, 2006.

Karen M. Rudd / Jaz

KAREN M. RUDD
NOTARY PUBLIC, STATE OF OHIO
My commission expires 5-21-2007

CAPTION

The Deposition of Samuel L. Belcher, taken in the matter, on the date, and at the time and place set out on the title page hereof.

It was requested that the deposition be taken by the reporter and that same be reduced to typewritten form.

It was agreed by and between counsel and the parties that the Deponent will read and sign the transcript of said deposition.

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CERTIFICATE

STATE OF Ohio :

COUNTY/CITY OF Hamilton / Cincinnati :

Before me, this day, personally appeared, **Samuel L. Belcher**, who, being duly sworn, states that the foregoing transcript of his/her Deposition, taken in the matter, on the date, and at the time and place set out on the title page hereof, constitutes a true and accurate transcript of said deposition.

Samuel L. Belcher

Samuel L. Belcher

SUBSCRIBED and SWORN to before me this 12th day of October, 2006 in the jurisdiction aforesaid.

4-21-10 Maureen Johns

My Commission Expires Notary Public

NOTARIAL SEAL STATE OF OHIO

MAUREEN JOHNS
Notary Public, State of Ohio
My Commission Expires 04-21-10

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DEPOSITION ERRATA SHEET

RE: SetDepo, Inc.
File No. 11192
Case Caption: Triforest Enterprises, Inc. vs. Nalge Nunc International Corporation

Deponent: **Samuel L. Belcher**
Deposition Date: September 19, 2006

To the Reporter:
I have read the entire transcript of my Deposition taken in the captioned matter or the same has been read to me. I request that the following changes be entered upon the record for the reasons indicated. I have signed my name to the Errata Sheet and the appropriate Certificate and authorize you to attach both to the original transcript.

Page No. 6 Line No. 4 Change to: COX CAN

Reason for change: NAME

Page No. 20 Line No. 16 Change to: WHITE-OUT

Reason for change: CORRECT SPELLING

Page No. 20 Line No. 21 Change to: WHITE-OUT

Reason for change: CORRECT SPELLING

Page No. 21 Line No. 25 Change to: HUEBLEIN

Reason for change: CORRECT NAME

Page No. 31 Line No. 21 & 23 Change to: RYDEC

Reason for change: NAME CORRECTION

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Deposition of Samuel L. Belcher

Page No. 55 Line No. 13 Change to: expensive

Reason for change:

Page No. ____ Line No. ____ Change to:

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Reason for change:

SIGNATURE: Samuel L. Belcher DATE: 10/12/06

Samuel L. Belcher

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SIGNATURE:__________________________DATE:____________

Samuel L. Belcher

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August 28, 2006

Mr. Brett Schatz, Esq.
Wood, Herron & Evans
441 Vine Street
Cincinnati, OH 45202-2917

TriForest Enterprises Inc. v Nalge International Corporation

Mr. Schatz, the following information is furnished to you per your request. You asked that I complete the following:

(a) Review the materials you furnished to me

(b) Review competitive sample containers

(c) Discuss cost of manufacturing the different containers in question

(d) Review the statements of Mr. Lin and comment as to their validity

(e) Summarize as to competitors' costs, advantages and disadvantages if this trademark is granted

(f) State my opinions and why I so opined

(g) Outline of my experience and publications

(h) List of court cases that I participated as an expert witness

Each section stated above follows in the outlined order.

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TriForest Enterprises Inc. v Nalge International Corporation

Section A – Review of Materials

In reviewing this case and to support my opinion, I have reviewed the following documents and photographs.

I. Attachments to letter dated 7/13/06.

(a) Opposition No. 91165809. TriForest Enterprises Inc. v Nalge International Corporation. I marked Exhibit (A).

(b) Declaration of Steve Lin in Response to Opposition to Opposer's Motion for Summary Judgment; and Response to Rule 56 (f) Motion. I marked Exhibit (B).

(c) Declaration of Steve Lin in Support of Motion for Summary Judgment. I marked Exhibit (C)

II. Attachments to letter dated 7/26/06

(a) Response to Opposition to Opposer's Motion for Summary Judgment; and Response to Rule 56(f) Motion. I marked Exhibit (D).

(b) Notice of Motion for Summary Judgment. I marked Exhibit (E)

(c) Declaration of Steve Lin in Support of Motion for Summary Judgment. I marked Exhibit (F)

(d) Motion for Summary Judgment (23 pages, Exhibits 1 & 2) U.S. Patent No. 4,595,130 dated June 17, 1986, Exhibit 3, T.B. Birnbaum, Patented August 7, 1894, Exhibit 4 – U.S. Patent No. 4,526,289 dated July 2, 1985; Exhibit 5 – United States Patent and Trademark Office – Reg. No. 2,287,138, Registered Oct. 19, 1999; Exhibit 6 – United States Patent and Trademark Office – Reg. No. 2,382,784, Registered Sept. 5, 2000; Exhibit 7 – (01-26-2004) Applicant: Nalge Nunc International Corporation – Trademark 76572253; Exhibit 8 – Bomatic, Inc., Catalog 18 oz. Boston Round, 3 pages; Exhibit 9 – Mayfair Plastics, 16 oz. Boston Round, 3 pages. I marked Exhibit (G)

III. Attachments to letter dated July 24, 2006

(a) Color photographs of various bottles. I marked Exhibit (H)

(b) Black and white and color pictures of bottles from various websites. I marked Exhibit (I)

(c) Copy of www.bomatic.com catalog. I marked Exhibit (J)

(d) Copy of pages from www.mayfairplastics.com Stock Product Line. I marked Exhibit (K)

(e) Copy of page from www.sportsbottleworld.com. I marked Exhibit (L)

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(f) Copy of page from www.bigpromotions.net. I marked as Exhibit (M)

(g) Copy of page from http://store.kayakcentre.com. I marked as Exhibit (N)

(h) Copy of page from http://image.bizarre.com. I marked as Exhibit (O)

(i) Copy of page from http://www.mountaingear.com. I marked as Exhibit (P)

(j) Copy of page from www.cdimugs.com. I marked as Exhibit (Q)

(k) Copy of page from www.campsaver.com I marked as Exhibit (R)

(l) Copy of page from www.swissknifeshop.com. I marked as Exhibit (S)

(m) Copy of page from www.jessehunting.com. I marked as Exhibit (T)

(n) Opposer, TriForest Enterprises, Inc.'s Response to Applicant's First Set of Requests for Admissions. 8 pages. I marked as Exhibit (U)

(o) Opposer, TriForest Enterprises. Inc.'s Response to Applicant's First Set of Interrogatories. 24 pages. I marked as Exhibit (V)

Samuel L. Belcher

TriForest Enterprises Inc. v Nalge International Corporation

Section B – Review Sample Containers

I have reviewed all the photographs that you supplied to me with your letter of July 24, 2006 and all the photographs on copy pages, plus drawings in the patents, and the registered trademark containers, as per the list of documents I mentioned in Section (A).

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TriForest Enterprises Inc. v Nalge International Corporation

Section C – Cost of Manufacturing

Each container manufacturer has their own cost accounting department. Each have developed how their costs per machines, resin used, floor space, warehousing, sales and administration, profit desired, etc.

I will comment as to container design, plastic material used, regrind, method of manufacture, mold costs, and packaging based on my over forty-five (45) years in the plastics industry. I have been labeled "Sam, the bottle man" by the plastic bottle industry.

The container customer really sets the design of the container. They usually specify the weight, the finish, size (opening with threads or snap fit, etc.) and the shape of the container. A round plastic container is not necessarily the lowest cost container to produce. How the shoulder of the container is designed is very important not only for top load strength, but also for minimum use of plastic resin. Also, how the bottom of the container is designed to play a major role in function, once again for top load, drop test, and sitting flat on a horizontal surface. If the container is produced via free extrusion blow molding, there will be a tail scar, where the round parison was pinched together to close the blown container. This tail scar is a weak point in the blown container and must be protected during drop impact. This tail scar or pinch off area is also subject to stress cracking depending on the product it is designed to hold. All of the above must be considered by the designer and the designer must strive to use the least amount of plastic material to produce the blown container. The wall thickness in a blown container determines the length of time the blown container has to be held in the blow mold against the cavity wall of the blow mold with adequate air pressure or some other gas to allow the heated plastic to cool so the blown container can exit the blow mold and be cool enough to be handled, retain the desired shape, and have minimum post shrinkage. Each thermoplastic material has their own shrink characteristics upon cooling. Each thermoplastic resin has its own "specific heat." This is the measure of the rate at which the thermoplastic resin absorbs heat and is the rate that it will give up the heat it has absorbed. It can easily be understood that the same container design running in two different designed blow molds can be very different in costs to be produced.

There are several other main points in blow molding a container via extrusion blow molding that have major effect on the blown container cost.

The finish of the blown container may be blown as on a gallon high density polyethylene milk container. The finish may be compression molded or referred to in the industry as a calibrated neck finish. The finish may also be a true compression molded neck finish such as produced on an Owens Illinois BC-3 blow molding machine. They may all be labeled a 38mm A 400 neck finish; however, they are all very different in dimensional tolerances, weight and strength. The weight of the different finishes could be as high as 6 grams different, and this weight is very important in the costing of the blown container.

The design of the blow mold is a major factor. One has to look at the metal used to construct the blow mold. Blow molds can be made from aluminum (different grades), they can be made from stainless steel, they can be made from beryllium copper and ampcoloy or a combination of these metals. The heat conductivity is different for each one of these metals. Thus, how quickly the heated plastic in the blow mold can be cooled affects the cycle time or number of bottles that can be produced per hour.

Not only the metal used in the design is important but also how the blow mold is vented is very important. Each mold shop has their own way to vent a blow mold. When the blow molds close, air is trapped within the blow mold between the heated parison to be blown and the cavity of the blow mold. This air must escape quickly. If air is trapped, the desired blown container will not have its desired shape, it can have different shrinkage within its own shape, and the wall distribution can be drastically affected. It's like a train entering a tunnel. If you close the end of the tunnel, the train will not be able to go through the tunnel as the air compresses and becomes a force that is greater than what force is entering, plus as the air compresses it heats. This heat can actually show burn marks on the blown container.

The blow mold has to be cooled via some media to allow the heated plastic to give up its heat and cool. Most mold shops do not calculate the "Reynolds Number" nor the "Heat of Extraction Load" when they design and build blow molds. There are basic formulas to calculate both these very important characteristics of a blow mold. If you do not achieve turbulent flow of the coolant through the blow mold, the coolant will not be effective. You must be above the number 5000 for the Reynolds Number to achieve turbulent flow of the coolant. Laminar flow will result under this number, which is similar to a smooth water flow. If the mold designer doesn't calculate the "Heat of Extraction Load," they are only guessing and using old water circuit designs that they have used in other similar blow molds. This happens every day in the industry since no one complains, but accepts the cycle time they achieve as the industry standard for this type plastic, this style container design, and how hot the containers come out of the blow molds. All of this affects efficiency and costs. I can also state two different manufacturers could produce the Nalgene narrow mouth bottle and have very different costs. In addition, a manufacturer could produce a competitor's bottle at a lower cost even though the competitor's bottle looks completely different than the Nalgene narrow mouth bottle.

Thus, a similar or like plastic container made by one company may be produced; however, one company's cost and profit will be different. In addition, a dissimilar plastic bottle than the Nalgene narrow mouth bottle may be produced by a plastic bottle manufacturer addressing these above factors efficiently to produce a less costly plastic bottle.

I have not yet mentioned a pet peeve of mine, and that is regrind or off fall when you are producing containers via the free extrusion blow molding process. During free extrusion blow molding, you will have a tail at the bottom of the container, and excess plastic around the finish of the blown container called the "moille." This is referred to as off fall or regrind. How this regrind is handled can determine your profit or loss. Normal off fall or regrind may average 15-35% of the parison's total weight. If handled ware is produced, the off fall may run as high as 50%. Thus, if you are using a heated parison that weighs 90 grams, and the final blown container weights 65 grams, each cycle you are generating 25 grams or 28% off fall. Another company producing a like container may be using an 85 gram heated parison and the final blown container may be 65 grams also, yet it is generating only 20 grams of off fall or 23%. Five grams per cycle is very significant. Depending on the raw resin costs, each gram saved is worth $1 per thousand in costing.

There are other factors such as trimming and reaming, that I haven't discussed. These post operations also have definite effect on the blown container costs.

The shape of a given bottle does not necessarily dramatically impact the cost of manufacturing; rather the cost of manufacturing is dramatically impacted by how the manufacturer addresses the factors discussed above. As a result, the design of the Nalgene narrow mouth bottle does not mandate a less costly bottle to manufacture. At the same time, dissimilar bottles can be less costly to manufacture.

If you look at similar polycarbonate bottles, such as the Kayak Centre Lexan water bottle, this bottle may be no more costly or different to manufacture than the Nalgene narrow mouth lexan bottle. The closure shown may use less plastic material than the Nalgene closure. It will be strong since it is polycarbonate. The type of decoration is usually up to the customer and the customer is usually given the cost differences for paper label, silk screening, hot stamping, shrink labeling, etc. or no label.

The bottles on the website www.cdimugs.com which are also of Lexan (polycarbonate) may also be no more costly or difficult to manufacture than the Nalge narrow mouth bottle. They are able to be decorated via standard decorating methods and tinted or water clear. Normally, the water clear plastic lexan bottles are lower in costs than the tinted, due to the added costs of the tint coloring being added to the base material resin. I previously addressed this issue of the cost of color additives for use in the thermoplastic industry.

I previously stated plastic bottle costs have many factors that affects their manufacture from the resin choice, the method of manufacture and even the blow molding machine that you choose to use to produce the blow molded plastic bottle. In summation, you cannot look at two like containers and say their costs are the same.

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TriForest Enterprises Inc. v Nalge International Corporation

Section D – Statements of Mr. Lin

Mr. Lin states the issue of narrow mouth containers versus wide mouth containers and never defines what is the difference. In the blow molded container industry we normally refer to a narrow mouth container as any blown plastic container that possesses a finish 48mm and under. Wide mouth blown plastic containers are considered 53mm and larger.

Mr. Lin states on page 2, beginning of paragraph 3, that "TriForest has developed its bottle for universal use with specialized applications including withstanding temperatures of (121°C) (250°F) steam sterilization." He doesn't state at what pressure or length of time. However, the normal plastic bottles using the non-engineering resins will not withstand (250°F - 121°C) in use. There are engineering plastic resins used as polycarbonate, polysulfane, and cyclic olefin copolymer that can be utilized under specific conditions in the plastic bottle industry.

On page 2, 3rd paragraph, "able to withstand accidental falls of 5 meters (16.404 feet) or higher without spilling the content." This is not a standard ASTM test that is used in the plastic bottle industry. He does not indicate falling on what, grass, hay, concrete, steel, nor what contents are in the plastic bottle nor what closure is applied. This is a statement with no foundation.

In paragraph 3, once again Mr. Lin states, "and by enlarge safer for carrying hazardous, toxic contents." This is a dangerous statement if made to the public. There are definite government regulations for plastic containers to be used to package either hazardous or toxic products.

In paragraph 3, Mr. Lin states, "the bottle is an ideal replacement of lab bottles that are commonly made of glass." Plastic blown containers are only used in labs where they have been tested specifically for use in the labs with specific liquids or other products. Polycarbonate as a plastic resin is used in the blow molding bottle industry. Polycarbonate blown bottles scratch easily and are relatively poor as to moisture barrier protection. There are several choices of plastic resin that are water clear, under a dollar a pound, have good organeliptic properties. Polyethylene terephthlate (PET) is the predominant choice in the plastic blow molding industry today for water. Polyvinyl chloride (PVC) is also a choice.

Mr. Lin states on page 3, 2nd paragraph, "On reading the NNI Mark claims, one can generally assume it describes any Boston round bottle of 500 ml and 1000 ml capacity." Exhibit 7 describes a blown plastic water bottle. There is nothing in the write up that states it is a Boston round.

On page 3, last paragraph, Mr. Lin is incorrect when he states, "The opaque screw cap is cheaper and softer. It would be more difficult to make a transparent cap." This is definitely not true. Color of a cap or closure as it is referred to in the industry is accomplished by adding a colorant to the base plastic resin material. Colorants are expensive. Colored closures are used by many companies to add aesthetics to the total package (bottle and closure), to assist in distinguishing their product from the competitors, for brand recognition, and a natural closure where one can see the threads or snap of the container is really not attractive so by using color in the closure, the consumer doesn't see the relation of the closure to the finish on the blown plastic bottle.

On page 4, paragraphs 3, 4, and 5, Mr. Lin states his opinions as to a Boston Round and ratios used.

I worked for Owens Illinois in their plastic products division in the 1960s. The term Boston Round was used in OI's glass division and we in the plastic products division continued to use this term for round blown plastic containers whether it was for a 4 ounce injection blow molded container up to 1 gallon blown plastic containers. We gave no concern to the ratios described in Exhibit 7 by NNI. In designing a blown plastic container as I stated previously, once the customer provides the finish size desired, the weight of the container, the volume of product the bottle must contain, the fill point, how it is to be decorated, and the cost parameters, the designer then uses this information knowing the blow molding process used by his or her company, then proceeds to design the bottle. There are literally millions of 4 ounce round injection blow molded plastic bottles referred to as a 4 ounce Boston Round that do not fit this ratio; i.e., overall height of 4.555 inches and a body diameter of 1.615 inches. (Exhibit 1) There is also a large number of bottles that fit these ratios and still look different than the Nalgene narrow mouth bottle.

This ratio is 1.615 / 4.555 = 0.354 and the ratio of the height without the neck finish is 4.00 inches and the overall height is 4.555, this ratio is 4 / 4.555 = 0.878. Another example is the plastic injection blow molded bottle used by Walgreen's to hold buffered aspirin. The ratios in this case are as follows: (Exhibit 2)

O.A. Height = 3.11 inches
Ht. shoulder to bottom = 2.6 inches
Body Dia. = 1.695 inches
The ratios are 1.695 / 3.11 = 0.545 and 2.6 / 3.11 = 0.836

The third example is an extrusion blow molded plastic container for holding Hydrogen Peroxide. The ratios are: (Exhibit 3)

OAH = 5.53 inches
Ht shoulder to bottom = 4.74 inches
Body Dia. = 2.21 inches
The ratios are 2.21 / 5.53 = 0.399 and 4.74 / 5.53 = .857

A prime example of a wide mouth is the quart jar used for salad dressing and mayonnaise, which uses a 69mm closure. (Exhibit 4)

Ht shoulder to bottom = 5.17 inches
Dia. Body = 3.80 inches
OAH = 6.05 inches
The ratios are 5.17 / 6.05 = 0.85 and 3.80 / 6.05 = 0.62

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The last example is an injection stretch blow molded crystal polystyrene used by Becton Dickinson and is a true roller jar used by BD to grow cultures. (Exhibit 5)

OAH = 10.75 inches
Ht shoulder to bottom = 9.5 inches
Dia. Body = 4.64 inches
The ratios are 9.5 / 10/75 = 0.884 and 4.64 / 10.75 = 0.432

In all the years of designing plastic blow molded bottles, I have never worried about these ratios nor has anyone I have associated with in the plastic blow molding bottle industry ever mentioned or discussed the above ratios. We design based on the plastic resin to be used, top load requirements, drop test requirements, product to be packaged, fill point desired, temperature restraints, possible recycling, use of regrind, the blow molding process to be used and the desired weight of the final container – all of this to meet sales costs.

I do not consider a ratio of 4.7 to be close to 0.4 from an engineering point of view. Nor do I consider 0.9 to be the same as 0.8. Mr. Lin states on pages 4 and 5 that this is within the Nalge range. Through the use of Computer Aided Design (CAD) we can be within thousands in design of all the desired bottle dimensions.

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TriForest Enterprises Inc. v Nalge International Corporation

Section E – Summary of Advantages or Disadvantages If the Trademark is Granted

In my opinion a trademark is sought to protect the image of your product to the general public. Once the general public becomes aware of the trademarked package, they relate this package with the product it packages and also the company that produced the package.

In today's plastic bottle market each company is hoping to create niche market into which they can sell their product. The plastic bottle market is a world market and competition forces a plastic bottle producer to find a way to differentiate themselves from their competition. A patent is one form of protection and the trademark is the other form of protection.

I have cited many reasons in my previous discussions as to the plastic bottle industry relative to costs, bottle design, choice of plastic resin, mold design, the blow molding process chosen, the use of colorants or tints, plus the use of off fall or regrind that one must understand to be a player in the world plastic bottle market.

I see no reason for Nalgene or any other company that secures a trademark to have any advantage over any company that chooses to compete with the company that has the trademark. Anyone can copy but it takes effort to be creative and to think "out of the box."

All companies in the plastic bottle market are striving to achieve the image that Coca Cola created years ago with the hourglass Coca Cola glass bottle, or the Jim Beam liquor bottle, or Listerine's mouthwash design. Companies selling clear plastic bottles to the water packagers are using shapes, ribs, tints, hologram type labels, etc., trying to differentiate their water bottle from the others in the industry and just hoping that their design and label plus closure becomes the leader in the plastic water bottle market. These features do not place their plastic bottles at a cost disadvantage, so long as professional manufacturing techniques are employed.

The real secret is to differentiate yourself from the others in the same market with a better product or package.

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TriForest Enterprises Inc. v Nalge International Corporation

Section F – Opinion

It was very interesting reviewing all the copies of plastic bottles that were taken from the websites of Bomatic, Mayfair Plastics, TriForest, Sports Bottle World, Big Promotions, Store Kayak Centre, Image Bizrate, Mountain Gear, cd.mugs, campersaver, Swissknifeshop, JesseHunting and look at the headings on the pages. They range from outdoor use bottles by Triforest, Journeyer, Soft Shoulder, modified cylinder round, Boston Round, Tall Boston Round, Lexan Water Bottle, The Kayak Centre Lexan Water Bottle – many different names – and yet they all represent Boston Rounds.

There are many ways to distinguish your Boston Round from your competitors, yet be easily decorated and production costs are not affected.

Mr. Lin uses statements that are without foundation, such as a transparent closure versus a colored closure.

The use of this style closure does not prohibit other designs by plastic bottle producers.

The trademark does not state what finish size is requested; however, in the plastic blow molding industry, water bottles juice bottles, isotonic drinks, etc. usually have from 28mm up to 43mm. Thus, there is a wide design range available to any competitor.

The fact remains that the term Boston Round is generic and modified in many ways by plastic bottle designers and referred to by advertisers as they deem necessary to sell into their desired market; i.e., modified cylinder round's soft shoulder.

The opposer has not offered any concrete evidence that the issuance of the trademark to Nalge would create a monopoly or create a hardship on their company.

I have shown that other blown plastic bottles fall outside the ratios stated in the trademark language.

I have also stated many factors that affect a blow molded bottle costs and these are controlled by the blown plastic bottle producer. Nalge also has to contend with the same manufacturing cost areas.

Therefore, I find no valid reason for Nalge not to be granted the trademark as so stated on page marked 76572253.

I am being compensated at an hourly rate of $225.00 per hour.

Samuel L. Belcher
President, Sabel Plastechs, Inc.

Confidential

TriForest Enterprises Inc. v Nalge International Corporation

Section G– Outline of My Experience, Publications and Honors

I have been in the plastics industry for over 45 years. I have had the privilege to have worked for the leaders in the plastic industry and with individuals who gave freely of their experience and knowledge to me as I did my daily work. I continue to have talented friends in many of the leading plastic companies today.

When I worked at Rubbermaid in Wooster, Ohio, Rubbermaid was the world's leader in plastic, rubber, and wire coated household products, also in rubber car mats and vinyl car mats. I designed the plastic spice rack, which became the largest single sales item ever produced by Rubbermaid.

I then moved to Owens Illinois in Toledo, Ohio where I first worked in the Plastic Products Division, then the Kimble Division, then Corporate Development and finally Lily Tulip Division. While there, they filed over 20 patents, one being the first flip top closure for detergents. They patented the injection molded beverage case, the twin sheet formed pallet and last we did the foam clam shell package for McDonalds to hold their sandwiches as the Big Mac, fish, quarter pounder, etc. We also created their foam breakfast package and I served the first breakfast ever served in a McDonalds' store. The salesperson with me walked out with an order for over 1 ½ billion packages.

I then moved to Wheaton Industries in Millville, NJ as Director of Research. While at Wheaton, we designed the first injection blow molding machine for processing PET. We produced the first injection blow molded PET bottle in the industry for Foremost McKesson to package their ice cream topping which is sold today in stores, only it is now owned by Smuckers in Orrville, Ohio. We then did the first Nyquil PET bottle for Vick Chemical now owned by Procter & Gamble, Cincinnati, Ohio. This was followed by the first 50 ml liquor bottles for different distillers for airline sales. We used this machine to produce the first plastic rack and pinion boots plus the CVJ boots for front wheel drive cars for General Motors and TRW who supplied Ford and Chrysler.

My next move was to Cincinnati Milacron as Development Engineering Manager. Here we developed reheat stretch blow molding machines plus injection machines and set companies up for producing PET soda bottles for the soft drink industry. We set up companies as Colgate, American Cyanamid for Pine Sol, which is now owned by Clorox. We developed RF heating for PET and did the beer ball development, which used an injection molded preform that weighed 233 grams, and had a wall thickness of 0.235 inches. We made the first salad dressing PET bottles, the first peanut butter PET bottles, the first Crisco PET bottles and many others for Coca Cola, Pepsi, etc.

I then left Milacron in 1987 and started my own consulting business. Most of my work is in blow molding and injection molding under secrecies.

Confidential

I now have over 56 patents.

I served on the Blow Molding Board of Directors, Society of Plastics Engineers for over 17 years filling every job and serving as Chairman for two terms.

I have lectured in the U.S., Canada, Mexico, England and Germany. My articles have been published in Japan, England, U.S. and Canada. Most of the plastic magazines as *Plastics Technology, Modern Plastics, Plastic News* and others that were bought out carried articles I have written as Packaging Plastics, Plastic Machinery and Equipment.

My chapters on blow molding are in books as Handbook of Blow Molding, Comprehensive Polymer Science and Plastics Engineering Handbook.

I have a book entitled Practical Extrusion Blow Molding in publication. A second book entitled Practical Injection Blow Molding will be published in November 2006.

Honors I have received are as follows:

(a) Fellow of the Society of Plastic Engineers
(b) Lifetime Achievement Award from the Blow Molding Division Board of Directors, Society of Plastics Engineers
(c) Listed in "Who's Who in Plastics & Polymers"
(d) Outstanding Engineering Alumni Award from my alma mater – The University of Akron, Akron, Ohio
(e) Voted in 2003 as a Member of the Plastics Hall of Fame – the highest honor one can receive in the plastics industry

Education:

BSME – University of Akron
MBA – University of Toledo
Advanced Marketing – Stanford

Professional Engineer – State of Ohio
TelTech Expert, Advisor to University of Akron, College of Engineering
Seminar Instructor of Society of Manufacturing Engineers and Society of Plastics Engineers
Courses Covered: Blow Molding 101, Advanced Blow Molding, Injection Blow Molding, and Blow Mold Design.

Samuel L. Belcher
www.SabelPlastechs.com

TriForest Enterprises Inc. v Nalge International Corporation

Section H – Expert Witness Cases

Following is a list of court cases in which I served as an Expert Witness:

(a) DuPont vs Pfizer – for Plaintiff, DuPont

(b) American Can vs Continental PET – for the Plaintiff, American Can

(c) Plastipak vs Larry Walker – for the Defense, Plastipak Packaging

(d) JCI vs Graham Packaging – for the Plaintiff, Johnson Controls Inc.

(e) R&D vs Big 3 – for the Defense, Big 3 Precision Mold Services

(f) Ball Corporation vs Plastic Solutions Inc. – for the Plaintiff, Ball Corporation, Boulder, Colorado

(g) Lorin Coles vs Lipsey Mountain Spring Water – for the Plaintiff, Lorin Coles

(h) Lynn Shannon vs Owens Brockway – for the Plaintiff, Lynn Shannon

(i) Calas vs Faultless Rubber Co. (Abbott Labs) – for the Plaintiff, Jose Calas

(j) Phoenix Closure vs Silgan Plastics Corp – for the Plaintiff, Phoenix Closures, Inc.

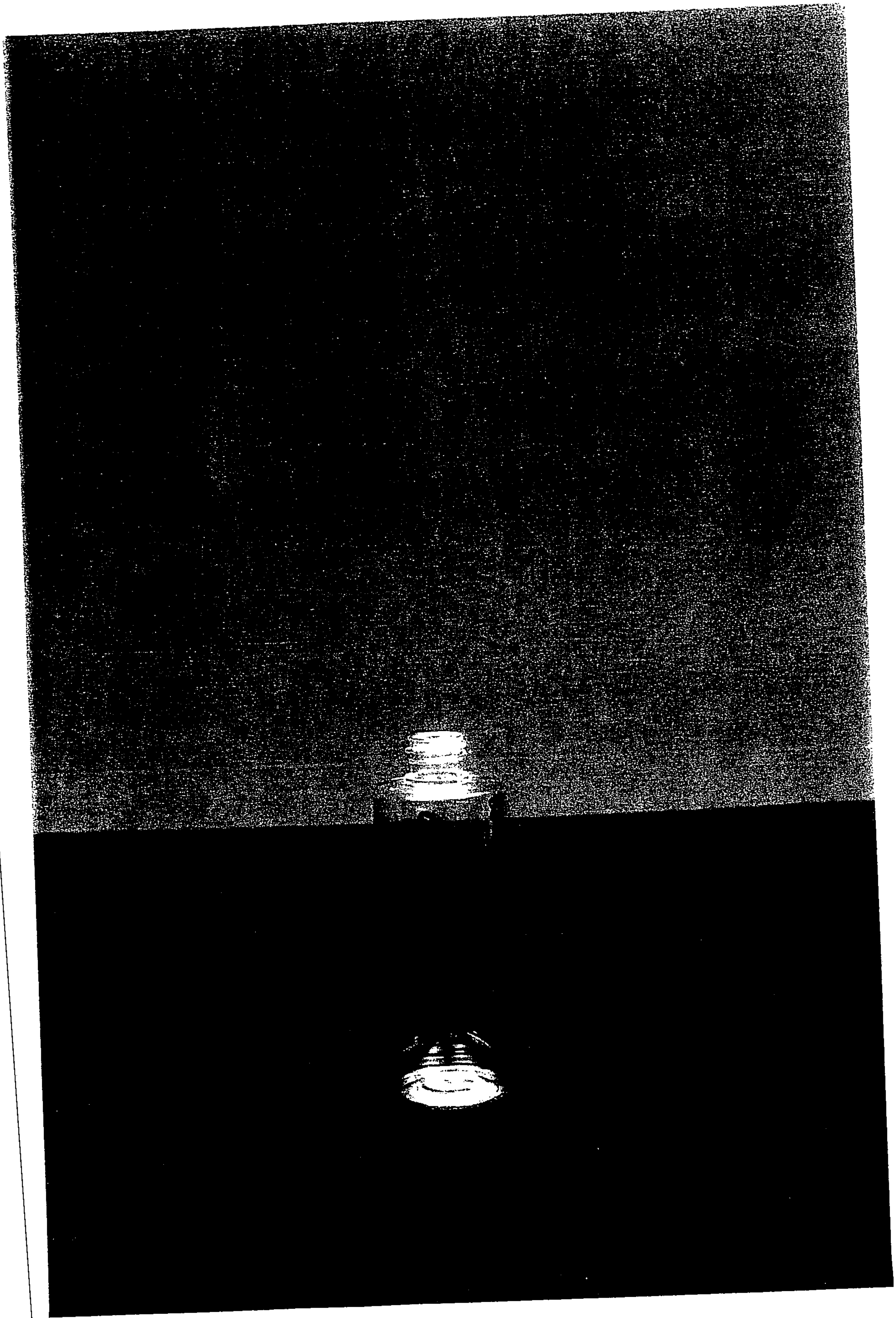
(k) Plastic Solutions Inc. vs Colormatrix – for the Plaintiff, Plastic Solutions Inc.

(l) Lifetime Products Inc. vs Office Star Products – for the Defense, Office Star Products

(m) Liquid Box vs Scholle Corp – for the Defense, Liquid Box

(n) Walters vs Owens Illinois – for the Plaintiff, Walters

EXHIBIT 1



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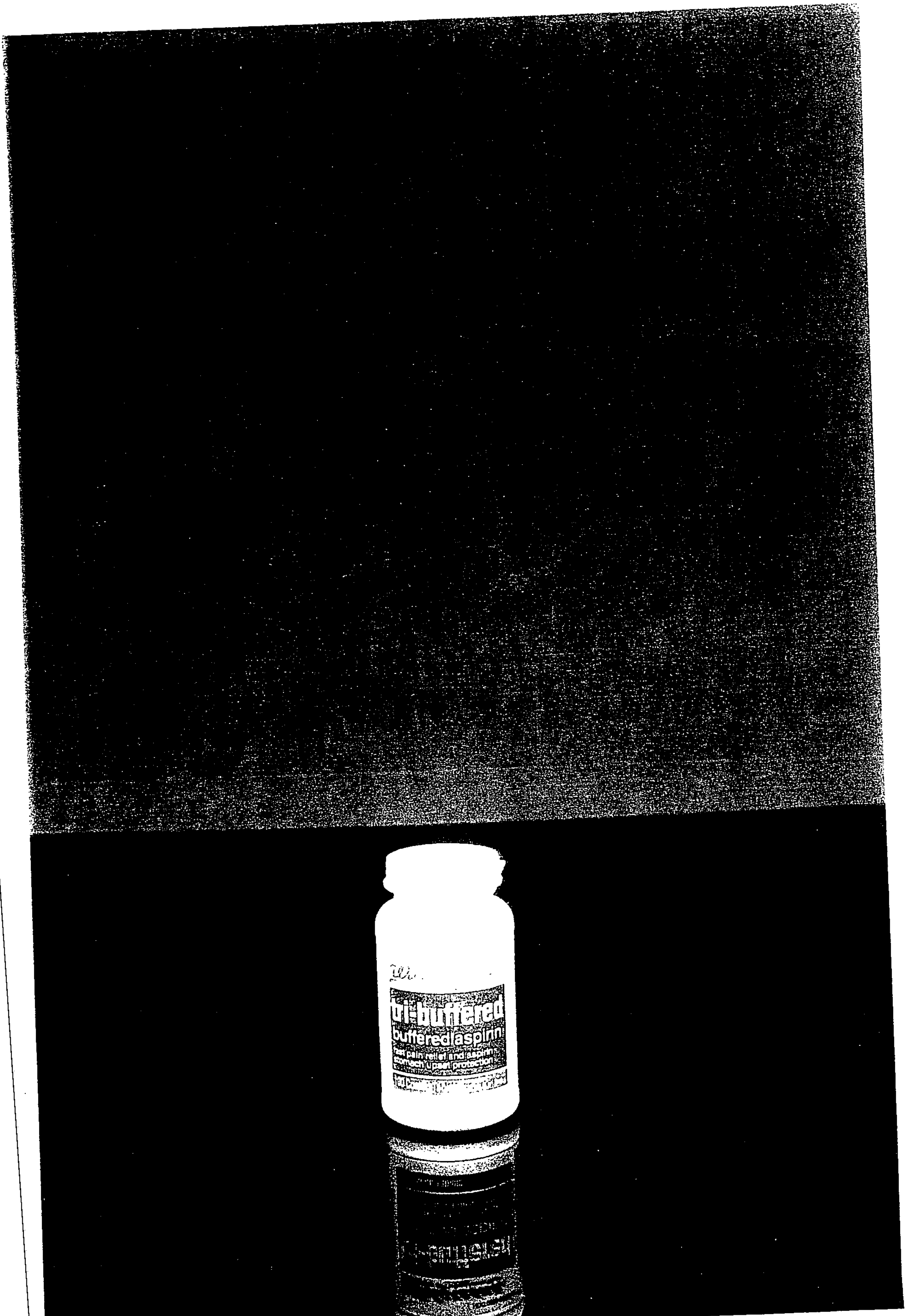
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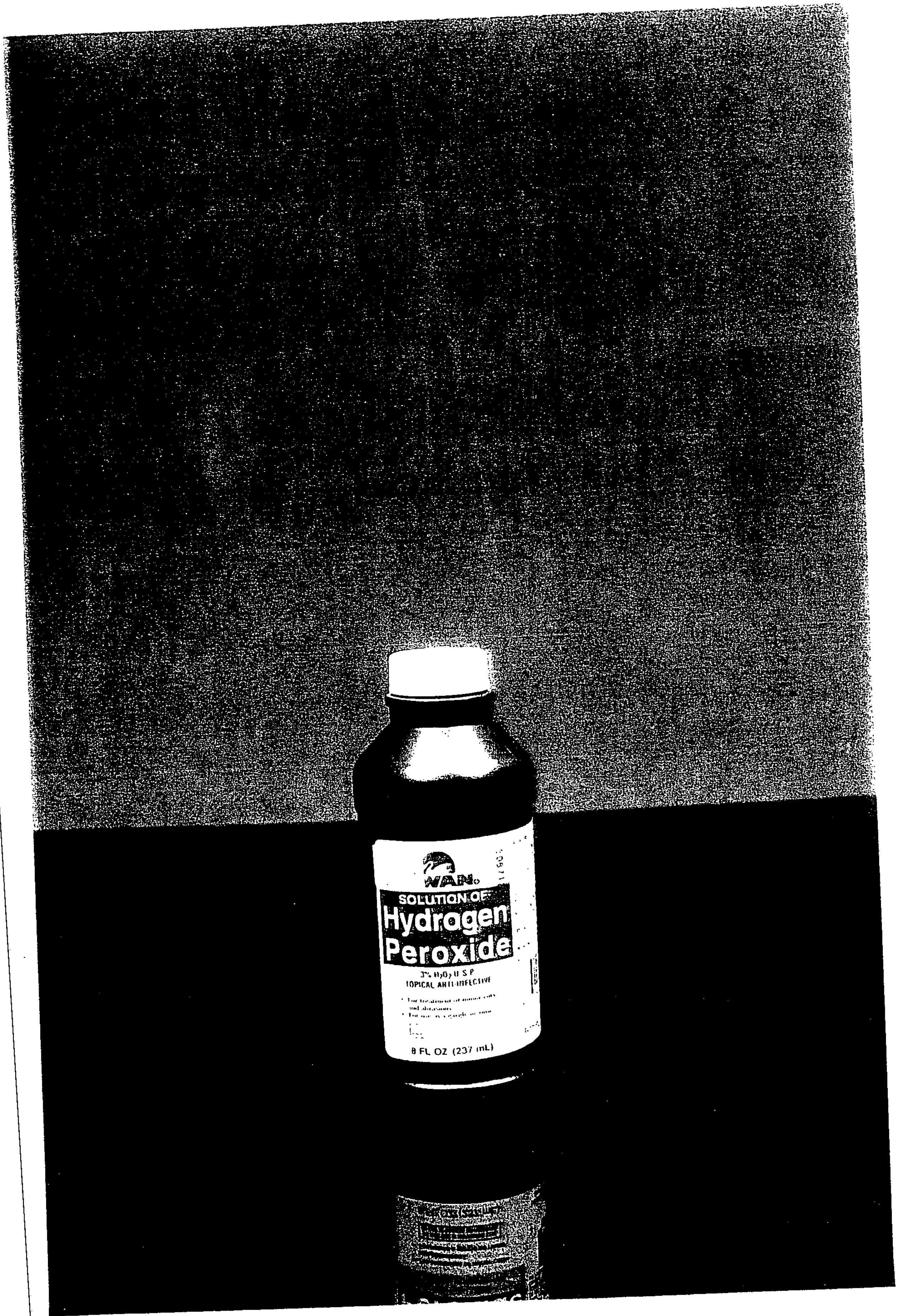
buffered aspirin
Fast pain relief and aspirin
stomach upset protection

EXHIBIT 3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Peroxide
3% H_2O_2 U S P
TOPICAL ANTI-INFECTIVE
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EXHIBIT 4

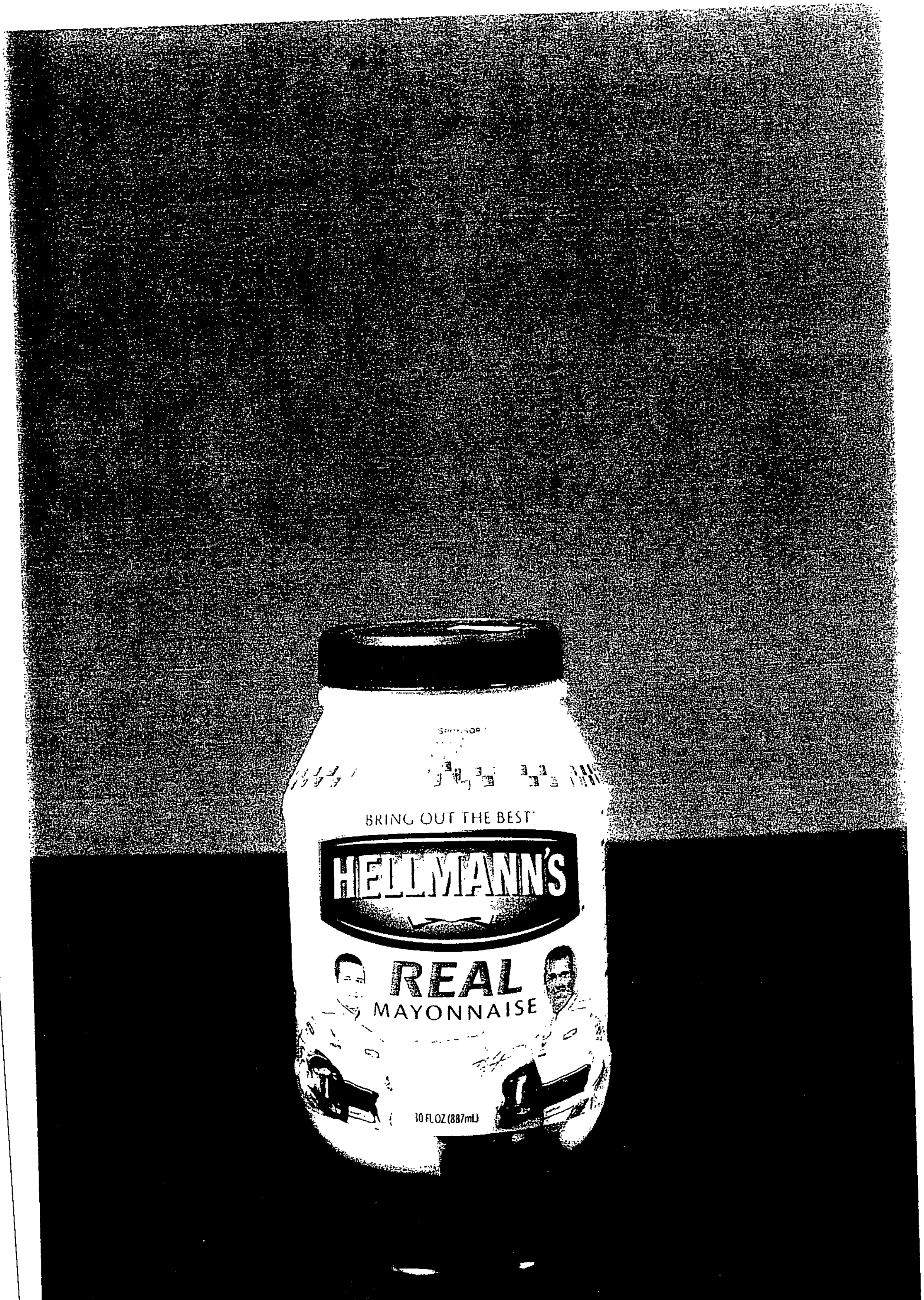
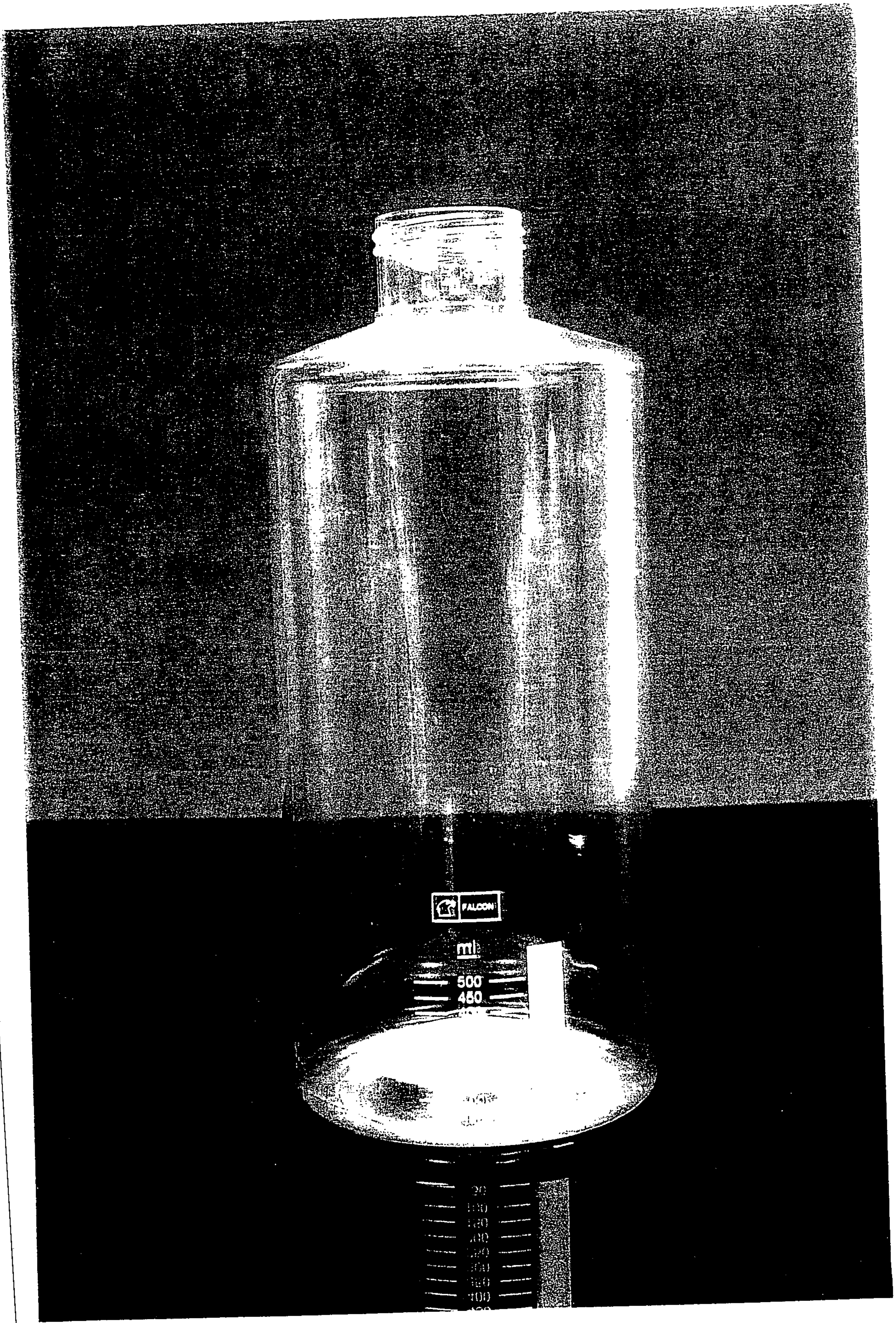

BRING OUT THE BEST
HELLMANN'S
REAL
MAYONNAISE

EXHIBIT 5


FALCON
ml
500
450